

Docket No.: 242758US

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF

KAZUHITO NARITA ET AL : EXAMINER: LE, DUNG ANH

SERIAL NO: 10/670,249 : DATE ALLOWED: December 23, 2004

FILED: September 26, 2003 : GROUP ART UNIT: 2818

FOR: METHOD OF MANUFACTURING:

SEMICONDUCTOR DEVICE USING STI TECHNIQUE

PETITION UNDER 37 C.F.R. §1.181(a)(3)

ASSISTANT COMMISSIONER FOR PATENTS WASHINGTON, D.C. 20231

SIR:

Applicants respectfully petition in accordance with 37 C.F.R. §1.181(a)(3) to obtain formal consideration by the examiner of the Information Disclosure Statement filed October 27, 2003. Attached is a copy of this IDS, a copy of the PTO 1449 form filed with the IDS, and a copy of the PEOPLE'S REPUBLIC OF CHINA Office Action (with English translation) submitted with the IDS, as well as a copy of a date stamped filing receipt evidencing the filing on October 27, 2003.

37 C.F.R. §1.181(a)(3) allows petition to invoke the supervisory authority of the Commissioner in appropriate circumstances. Accordingly, it is respectfully submitted that this

Petition under 37 C.F.R. §1.181 be granted and that the Examiner consider the IDS filed October 27, 2003 and the references cited therein.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,

MAIER & NEUSTADT, P.C.

Customer Number

22850

Eckhard H. Kuesters

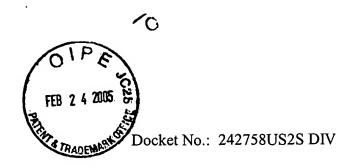
Registration No. 28,870

Attorneys of Record

Fax #: (703) 413-2220

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COMMISSIONER FOR PATENTS ALEXANDRIA, VIRGINIA 22313

OBLON
SPIVAK
MCCLELIAND
MAIER
&
NEUSTADT
P.C.

ATTORNEYS AT LAW

RE: Application Serial No.: 10/670,249

Applicants: Kazuhito NARITA, et al.

Filing Date: September 26, 2003

For: METHOD OF MANUFACTURING

SEMICONDUCTOR DEVICE USING STI

TECHNIQUE Group Art Unit: 2818

Examiner: LE, DUNG ANH

SIR:

Attached hereto for filing are the following papers:

PETITION UNDER 37 C.F.R. § 1.181(a)(3)

Our check in the amount of \$0.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,

MAIER & NEUSTADT, P.C.

Eckhard H. Kuesters

Registration No. 28,870

Joseph Scafetta, Jr. Registration No. 26,803

Customer Number

22850

(703) 413-3000 (phone) (703) 413-2220 (fax) Docket No.

242758US2SDIV/shb

T AND TRADEMARK OFFICE IN THE UNITE

IN RE APPLICATION OF: Kazuhito NARIT

SERIAL NO:

10/670,249

GAU:

FILED:

September 26, 2003

EXAMINER:

FOR:

SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE SAME

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS ALEXANDRIA, VIRGINIA 22313

Applicant(s) wish to disclose the following information.

REFERENCES

- The applicant(s) wish to make of record the references cited in the attached People's Republic of China Office Action listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

- ☐ Each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed. Arras 1 18.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT, P.C.

Marvin J. Spivak

Registration No.

Joseph Scaretta, Jr. Registration No. 26,803

Customer Number

22850

Tel. (703) 413-3000 Fax. (703) 413-2220 (OSMMN 05/03)



Form PTO 1449 U.S. DEPARTMENT OF COMMERCE (Modified) PATENT AND TRADEMARK OFFICE			242758US2SDIV	10/670,249					
				APPLICANT					
LIST OF REFERENCES CHECK BOAPPLICANT			Kazuhito NARITA, et al.						
		1	5	FILING DATE		GROUP			
		FEB 2 4 2005	(C25)	September 26, 2003					
				U.S. PATENT DOCUMENTS					
EXAMINER INITIAL		DOBUMENT NO MEDEMARY	DATE	NAME	CLASS	SUB FILING DATE CLASS IF APPROPRIAT			
	AA	5,950,090	09/07/1999	C. CHEN, et al.					
	AB	4,389,294	06/21/1983	N. G. ANANTHA, et al.					
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		NUMBER						NO .	
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	AP AQ AR AS AT AU AV	NUMBER 3-71781	11/14/1991	JAPAN (corr. US 4,389,294)	nt Pages, et	YES		NO .	
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COPY

ดูกับ OSMM&N File No. <u>242758US2SDIV</u> Dept.: PP

By: MJS/shb

Serial No. 10/670,249

In the matter of the Application of: Kazuhito NARITA, et al.

For: SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE SAME

Due Date: 12/26/03

The following has been received in the U.S. Patent Office on the date stamped hereon:

■ Dep. Acct. Order Form

■ Information Disclosure Statement

■ PTO-1449

■ Cited References (1)

■ PEOPLE'S REPUBLIC OF CHINA Office Action (with English translation)



Address: 6 Xi Tu Cheng Lu, Haidian, Beijing Post Code: 100088

Applicant:	KABUSHIKI KAISHA TOSHIBA	
Attorney:	WANG YONGGANG	Date of Notification:
Application No.:	01125493.9	Date: 18 Month: 07 Year: 2003
Title of the Invention:	半导体装置及びその制法	

Notification of the First Office Action

above-identifi People's Repu	ed patent applicati ablic of China(here atent Office has de	ition as to substance and exa on for invention under Articl inafter referred to as "the Pa cided to examine the applica	e 35(1) of the Patent Law of tent Law").	f the
2 ☑ The applicant c	laimed priority/pri	orities based on the applicati	on(s):	
filed in J	P on Ju	ne 30, 2000 , filed in	on	·,
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Examination as pages of the pages of the pages of the the abstract submit	to substance was a description, claims description, claims description, claims ted on, and	directed to the initial applica directed to the documents as as and pages of the figure for the abstract state.	specified below: f the drawings submitted on f the drawings submitted on f the drawings submitted on	
□ Below is/are	on is issued with c	onsideration of the search re cument(s) cited in this Office		nber(s) will

No.	Number(s)	or Title(s) of Ref	erence(s)	Date of Publication
			• •	(or the filing date of conflicting application)
1		US5950090A		Date: <u>7</u> Month: <u>9</u> Year: <u>1999</u>
2		US4389294A		Date: 21 Month: 6 Year: 1983
3				Date: Month: Year:
4				Date: Month: Year:
5				Date: Month: Year:
7. In \(\text{C} \) 8. The \((2) \) 1. (2)	The description does not come the Claims: Claim(s) is/are not come to come the Claims: Claim(s) does/do not paragraph 1 of the Implement Claim(s) does/do not patent Law. Claim(s) does/do not patent Law. Claim(s) does/do not does/do not does/do not come to come the Patent Law. Claim(s) does/do not does/do not come to come the Patent Law. Claim(s) does/do not come to come the Patent Law. Claim(s) does/do not come to come the Patent Law. Claim(s) does/do not come to come the Patent Law. Claim(s) does/do not come to come the Patent Law. Claim(s) does/do not come to come the Patent Law come to the applicant should make a come to the Notification, otherwise the Application contains not sufficient reasons to prove the come to come the Patent Law counting from the dime limit is not met, the appleant Law Substitution page conformity with the relevant	comply with Artical does not comply with the enting Regulation of possess the not possess the interpolation of possess the interpolation of possess the property with Artical comply with Artical comply with the entity of the entity with th	cle 26 paragraph 3 of the ly with Rule 18 of the Implementation of the Patent the definition of inventions are definition of inventions. The ventiveness as required by Article 26 paragraph 4 of article 31 paragraph 1 of the provisions of Rules 20 article 9 of the Patent Law the provisions of Rule 12 paragraph 1 of the provisions of Rule 2 pa	der Article 5 of the Patent Law. Patent Law. Iplementing Regulations. Law. Is prescribed by Rule 2 cle 22 paragraph 2 of the In Article 22 paragraph 3 of the Iquired by Article 22 paragraph If the Patent Law. Ithe Patent Law. Ithe Patent Law. Ithe Patent Law. Ithe Patent Law. In of the Notification. It is application is patentable and is pointed out in the text portion If the applicant fails to submit will be rejected. It is to the office action within 4 without any justified reason, the horawn. It is provisions of Article 33 of the is of the substitution should be in
(4)	he Reception Divisions have	ve no legal effect	•	ts not mailed or handed over to erview with the Examiner in the
	s Notification contains a text cited reference(s), totaling 2		ges and the following atta	achments:
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Text of the First Office Action

The examiner's comments are as follows:

Reference 1 discloses a method for fabricating a semiconductor transistor device, and in particular discloses the following technical features (col. 4. line 50 through col. 8, line 12, and Figs. 2A-2G): a semiconductor substrate (200); a transistor comprising a gate insulator film (210b) on the semiconductor substrate and a gate electrode (226) on the gate insulator film; and an element separation insulator film (224) comprising a first section (220) stretching from the surface of the substrate to the inside of the substrate and a second section (222a) which projects from the substrate. The technical feature in the last paragraph of claim 1 is not disclosed in reference 1. Reference 2 discloses a method for fabricating a semiconductor device that avoids residue at a vertical portion, in which (see col. 3, line 17 through col. 7, line 27, and Figs. 1-5) regions 34A and 34B on the substrate also have a section with a reversed taper shape, which has the same function of avoiding failure due to etching residue as that of the present invention. It is obvious to those skilled in the art to obtain the technical solution of claim 1 by combining reference 2 on the basis of reference 1 and arranging the second section of the element separation insulator film to contact the side of the gate electrode. Since claim 1 neither has prominent substantive features nor represents a notable progress with respect to references 1 and 2, it does not comply with Article 22, paragraph 3 of the Chinese Patent Law (CPL) for lack of the inventiveness.

The present application also has the following defects:

- 1. (This paragraph involves a typo occurred in claims 3 and 5, which we can take care of at our end).
- 2. The additional technical feature of claim 8 has never recorded in the specification, therefore, claim 8 does not comply with Article 26, paragraph 4 of the CPL.
- 3. (Subtitles need incorporating into the specification, which we can take care of at our end.)
- 4. (English abbreviations should be explained with Chinese translations when they are cited for the first time, which we can take care of at our end.)

The technical solution portion of the specification should accordingly be amended while the applicant amends the independent claims.

To sum up, the present application cannot be patented based on the current text. The applicant should make a response to this Action and make necessary amendments to the document in view of the comments set forth in this Office Action to overcome the existing defects; otherwise, the application shall be finally rejected under Article 38 of the CPL. The applicant is reminded of the provisions of Article 33 of the Chinese Patent Law that amendments shall not go beyond the scope of the disclosure contained in the initial description and claims.

中华人民共和国国家知识产权局

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申请人		株式会社东芝				Ki	
发明名称		半导体器件及其制造	方法			-	
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	对下述申请文件的						
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回函请寄: 100088 北京市海淀区蓟门桥西土城路 6号 国家知识产权局专利局受理处收

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	□ 6. □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	为结论性意见: 于说明书: □申请的内容属于专利法第 5 条规定的不授予专利权的范围。 □说明书不符合专利法第 26 条第 3 款的规定。 □说明书的撰写不符合实施细则第 18 条的规定。 □	大大大大大条条 对理陈分员规规授的的第条条 对理陈分受定定予规规 1 1 第	预选用权 关的3 正 陈 , 式 凡 " " " " " " " " " " " " " " " " " " "	生生的 发定的 文 述 如 应。。范 "	围卵观分由中合	定。中不清,有	义 出 无 指
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	审查	9 部 审查员 <u>赵煜</u> 审查部门业务专用章 (未加盖审查业务专用章		不具	备剂	 去律	效	カ)

第一次审查意见通知书正文

审查意见如下:

对比文件 1 公开了一种半导体晶体管器件的制造方法,它具体披露了下述技术特征(说明书第 4 栏 50 行至第 8 栏 12 行,附图 2A-2G): 所述器件具备半导体衬底(200); 在半导体衬底上的具备栅绝缘膜(210b)和在栅绝缘膜上的栅电极(226)的晶体管;具备从衬底表面延伸到衬底内部的第 1 部分(220)和从衬底突出的第 2 部分(222a)的器件隔离绝缘膜(224)。权利要求 1 中没有被对比文件 1 所披露的技术特征是: "上述第 2 部分的侧面至少部分地与上述栅电极的侧面直接接触,上述栅电极的剖面形状为倒锥形。"对比文件 2 公开了一种避免在垂直处产生残渣的半导体器件的制造方法,其中(说明书第 3 栏 18 行至第 7 栏 27 行,附图 1-5)位于衬底上的 34A、34B 区域的截面也为倒锥形,其目的同样是避免刻蚀残余引起的不良反映。从而本领域技术人员可以从对比文件 2 中得到将上述区别技术特征应用到对比文件 1 中以解决其技术问题的启示。由此可知,在对比文件 1 的基础上结合对比文件 2,并将上述器件隔离绝缘膜的第 2 部分与栅电极的侧面接触设置,得到权利要求 1 的技术方案对于本领域的技术人员来说是显而易见的。因此该权利要求 1 相对于对比文件 1 和 2 而言不具有突出的实质性特点和显著的进步,不符合专利法第二十二条第三款规定的创造性。

此外,本申请还存在下述缺陷:

- 1、权利要求 3、5 的附加技术特征是: "上述第 1 部分的上述栅电极侧的侧面与上述第 2 部分的上述栅电极侧的侧面不连续,并且上述第 2 部分的宽度比上述第 1 部分的宽度要宽。"而说明书中并没有上述记载,根据对说明书的理解,应当是:第 1 部分的器件隔离绝缘膜的侧面与上述第 2 部分的器件隔离绝缘膜的侧面不连续,并且上述第 2 部分的宽度比上述第 1 部分的宽度要宽。因此上述权利要求得不到说明书的支持,不符合专利法第二十六条第四款的规定。
- 2、权利要求8的附加技术特征的内容没有记载在说明书中,因此该权利要求不符合专利法第二十六条第四款的规定。

- 3、说明书应按照"技术领域"、"背景技术"、"发明内容"、"附图说明"、 "具体实施方式"这五部分的方式和顺序撰写,并且在说明书每一部分前面写明标题,以符合专利法实施细则第十八条第一、二款的规定。
- 4、说明书中第一次使用非中文技术名词时,应当用中文译文加以注释或者使用中文给予说明。而本申请的说明书中第一次使用非中文技术名词时没有给予中文说明,申请人应当对此进行修改,以符合专利法实施细则第十八条第三款的规定。

申请人在对独立权利要求修改的同时,注意对说明书发明内容的技术方案部分 做相应的修改。

综上所述,本申请属于专利法实施细则第五十三条第(二)、(三)项的情况,本申请按照目前的文本不能被授予专利权,申请人应该按照上述审查意见在指定的期限内陈述意见或进行修改,克服上述缺陷,否则将根据专利法第三十八条驳回本申请。修改时应满足专利法第三十三条的规定,不得超出原说明书和权利要求书的记载范围。